

CLAIM AMENDMENTS

1. (Currently Amended) An ablation probe, comprising:
an elongated member;
a heat ablative element mounted to a distal end of the elongated member; and
a plurality of independently controllable thermoelectric cooling devices mounted to
the elongated member in thermal communication with the ablative element.
2. (Original) The ablation probe of claim 1, wherein the elongated member is rigid.
- 3-4. (Cancelled).
5. (Currently Amended) The ablation probe of claim 1, wherein the thermoelectric devices is are in direct contact with the ablative element.
6. (Original) The ablation probe of claim 1, wherein the ablative element is a radio frequency (RF) electrode.
7. (Original) The ablation probe of claim 1, wherein the ablative element comprises a plurality of tissue penetrating needle electrodes.
8. (Currently Amended) The ablation probe of claim 1, further comprising a heat sink thermally coupled to the thermoelectric devices.
9. (Original) The ablation probe of claim 8, wherein the heat sink comprises a heat sink rod that extends through the elongated member, and a plurality of cooling fins formed at a proximal end of the heat sink rod.

10. (Currently Amended) The ablation probe of claim 8, wherein each of the thermoelectric devices comprises a cold side in thermal communication with the ablative element and a hot side in thermal communication with the heat sink.

11. (Currently Amended) An ablation system, comprising:
the ablation probe of claim 1;
thermal control circuitry electrically coupled to the thermoelectric devices, the control circuitry configured for independently transmitting a signal to the thermoelectric devices, whereby the thermoelectric devices cools the ablative element.

12. (Original) The ablation system of claim 11, further comprising an ablation source coupled to the ablative element.

13. (Original) The ablation system of claim 12, further comprising a console containing the thermal control circuitry and ablation source.

14-34. (Cancelled).

35. (Currently Amended) An ablation probe, comprising:
an elongated member;
a heat ablative element mounted to a distal end of the elongated member, the ablative element having a hollow cylindrical portion; and
a plurality of discrete, independently controllable, cooling devices circumferentially distributed around an inner surface of the cylindrical portion.

36. (Original) The ablation probe of claim 35, wherein the elongated member is rigid.

37. (Original) The ablation probe of claim 35, wherein the cooling devices are thermoelectric cooling devices.

38. (Original) The ablation probe of claim 35, wherein the ablative element is a radio frequency (RF) electrode.

39. (Original) The ablation probe of claim 35, wherein the ablative element is a tissue-penetrating electrode.

40. (Original) The ablation probe of claim 35, further comprising a heat sink thermally coupled to the cooling devices.

41. (Original) The ablation probe of claim 40, wherein the heat sink comprises a heat sink rod that extends through the elongated member, and a plurality of cooling fins formed at a proximal end of the heat sink rod.

42. (Currently Amended) An ablation system, comprising:
the ablation probe of claim 35; and
thermal control circuitry configured for independently controlling the respective cooling devices, whereby the cooling devices cool the ablative element.

43. (Original) The ablation system of claim 42, further comprising an ablation source coupled to the ablative element.

44. (Original) The ablation system of claim 43, further comprising a console containing the thermal control circuitry and ablation source.

45. (Currently Amended) An ablation probe, comprising:
an elongated member;

a heat ablative element mounted to a distal end of the elongated member; and
a plurality of discrete, independently controllable, circumferentially distributed cooling devices in thermal communication with the ablative element.

46. (Original) The ablation probe of claim 45, wherein the elongated member is rigid.

47. (Original) The ablation probe of claim 45, wherein the cooling devices are thermoelectric cooling devices.

48. (Original) The ablation probe of claim 45, wherein the cooling devices are in direct contact with the ablative element.

49. (Original) The ablation probe of claim 45, wherein the ablative element is a radio frequency (RF) electrode.

50. (Original) The ablation probe of claim 45, wherein the ablative element is a tissue-penetrating electrode.

51. (Original) The ablation probe of claim 45, further comprising a heat sink thermally coupled to the cooling devices.

52. (Original) The ablation probe of claim 51, wherein the heat sink comprises a heat sink rod that extends through the elongated member, and a plurality of cooling fins formed at a proximal end of the heat sink rod.

53. (Currently Amended) An ablation system, comprising:
the ablation probe of claim 45; and
thermal control circuitry configured for independently controlling the respective cooling devices, whereby the cooling devices cool the ablative element.

54. (Original) The ablation system of claim 53, further comprising an ablation source coupled to the ablative element.

55. (Original) The ablation system of claim 54, further comprising a console containing the thermal control circuitry and ablation source.

56-85. (Cancelled).

86. (New) The ablation system of claim 1, wherein the thermoelectric devices are configured for absorbing heat from the ablative element.

87. (New) The ablation system of claim 35, wherein the cooling devices are configured for absorbing heat from the ablative element.